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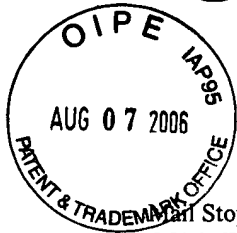
Atty. Docket No.: CIS0046US

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August 1, 2006

Mail Stop Appeal Brief - Patents
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Re:	Applicants:	Faisal Haq; Hari K. Lalgudi		
	Assignee:	Cisco Technology, Inc.		
	Title:	IMPLEMENTING ACCESS CONTROL LISTS USING A BALANCED HASH TABLE OF ACCESS CONTROL LIST BINARY COMPARISON TREES		
	Serial No.:	09/483,110		
	Examiner:	Frank Duong	Filed:	January 14, 2000
	Docket No.:	CIS0046US	Group Art Unit:	2616

Dear Sir:

Transmitted herewith are the following documents in the above-identified application:
    (1) Return Receipt Postcard;
    (2) This Transmittal Letter (1 page) *(in duplicate)*; and
    (3) Reply Brief (8 pages).

☒   No additional fee is required.
☐   The fee has been calculated as shown below:

☐ Fee Under 37 CFR § 1.17(f) for Filing an Appeal Brief		$	500.00
☐ Fee for Petition for Extension of Time *(X Month)*		$	0.00
☒ Conditional Petition for Extension of Time: If an extension of time is required for timely filing of the enclosed document(s) after all papers filed with this transmittal have been considered, an extension of time is hereby requested.			
☐ Please charge our Deposit Account No. 502306 in the amount of		$	0.00
☒ Please charge any additional fees required and credit any overpayment to our Deposit Account No. 502306.			
	TOTAL	**$**	**0.00**

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Attorney for Applicant   Date of Signature

Respectfully submitted,

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In the United States Patent and Trademark Office

Appellants' Names:	Faisal Haq; Hari K. Lalgudi
Assignee:	Cisco Technology, Inc.
Title:	Implementing Access Control Lists Using A Balanced Hash Table of Access Control List Binary Comparison Trees

Application No.:	09/483,110	Filing Date:	January 14, 2000
Examiner:	Frank Duong	Group Art Unit:	2616
Docket No.:	CIS0046US		

Austin, Texas
August 1, 2006

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REPLY BRIEF

Dear Sir:

This reply brief is submitted in response to the Examiner's Answer dated June 1, 2006.

-1-

STATUS OF CLAIMS

Claims 1-64 are pending in the application.

Claims 1-6, 16-21, 31-43, and 52-57 are rejected.

Claims 7-15, 22-30, 44-51, and 58-64 are objected to as being dependent upon rejected base claims.

Appellant appeals the rejections of claims 1-6, 16-21, 31-43, and 52-57.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3-6, 16, 18-21, 31-37, 39-43, 52, and 54-57 stand rejected under 35 U.S.C. § 102(b), as being anticipated by Dobbins, et al., U.S. Patent No. 5,509,123 (hereinafter referred to as "Dobbins"), as indicated in the Final Office Action mailed August 23, 2005 (hereinafter referred to as "FOA"), the Advisory Action mailed November 14, 2005 (hereinafter referred to as "AA"), and the Notice of Panel Decision from Pre-Appeal Brief Review mailed February 9, 2006.

Claims 2, 17, 38, and 53 also stand rejected under 35 U.S.C. § 102(b), as being anticipated by Dobbins, as indicated in the FOA, the AA, and the Notice of Panel Decision from Pre-Appeal Brief Review mailed February 9, 2006.

ARGUMENT

Appellant maintains the earlier arguments presented in the Appeal Brief ("Brief") mailed on March 9, 2006. Additionally, Appellant wishes to address the arguments set forth in the Examiner's Answer ("Answer") mailed June 1, 2006. Appellant notes that the Examiner's arguments do not present any new grounds of rejection.

Dobbins does not anticipate the Hash Table of Claim 1

The portions of Dobbins cited in the rejection of claim 1 do not anticipate the "Hash Table" of claim 1, which is a hash table that is configured to "store Binary Comparison Trees" as well as to "encode an Access Control List." Nevertheless, in the Answer, the Examiner states that the "CACHE or AVL tree and hash codes recited thereat constitute the claimed 'Hash Table.'" Answer, p. 3.

As noted in the Brief, the cache described in Dobbins stores the result (a single permission, such as "permit" or deny") of a filtering procedure, not a binary comparison tree. A single permission such as "permit" or "deny" is clearly not a binary comparison tree. Accordingly, the cache of Dobbins does not anticipate, teach, or suggest a "Hash Table" that is "configured to store Binary Comparison Trees," as recited in claim 1.

On page 6 of the Answer, the Examiner nevertheless states that "the 'cache memory' storing 'hash codes'" has been equated with the claimed hash table. The Examiner cites col. 31-33 of Dobbins as teaching a "'cache memory' storing 'hash codes.'" Answer, p. 6. However, this position is inconsistent with the teachings of Dobbins. The cited portion of the reference, col. 31-33, is the claims section of Dobbins. This section ends at column 32 and does not provide any additional mention of hash codes. The other portions of Dobbins do not describe the cache memory as storing hash codes. Instead, Dobbins states: "Setting an entry is done by hashing the source and destination addresses into a one byte hash code and linking the entry into a 'bucket' quickly accessible by that code." Dobbins, col. 10, lines 10-16. Accordingly, Dobbins describes how codes can be associated with entries, not how codes can be stored in the cache. Dobbins clearly does not teach or suggest a "cache memory" storing "hash codes," as asserted by the Examiner.

Furthermore, even if the cache memory does store hash codes, the cache memory would still not anticipate the hash table of claim 1, which is configured to "store Binary

-4-

Comparison Trees" as well as to "encode an Access Control List." As noted above, the cache memory of Dobbins neither stores binary comparison trees nor encodes an access control list. Accordingly, this feature of Dobbins does not teach or suggest the hash table of claim 1.

Furthermore, the AVL tree, both alone or in combination with the hash codes described in Dobbins, does not teach or suggest the hash table of claim 1. In particular, the AVL tree is quite clearly not a hash table, for the simple reason that a tree is not a table.

On pages 6-7 of the Answer, the Examiner nevertheless appears to be arguing that, because Dobbins includes both a hash table and a separate AVL tree that is used to implement an access list, Dobbins anticipates claim 1. In particular, the Examiner first equates the cache in Dobbins with the hash table of claim 1, and then equates the AVL tree with a hash table that is "configured to store Binary Comparison Trees" and to "encode an Access Control List." Answer, pp. 6-7. Appellant notes that, for at least the reasons presented above and in the Brief, neither the AVL tree nor the cache memory of Dobbins anticipates the hash table of claim 1.

Appellant further notes that the AVL tree and cache memory taught in Dobbins are quite clearly separate components that perform different functions (see, e.g., section B.2 of Dobbins, which focuses on the cache, and section B.3 of Dobbins, which focuses on the access list implemented using the AVL tree). Dobbins contains no teaching or suggestion to combine these two components in any manner, let alone a manner that would produce the hash table described in claim 1. For example, the hash codes described in Dobbins are described as being used to speed the retrieval of hashed data within the cache, not the AVL tree. These hash codes are never described in conjunction with the AVL tree. Section B.2 of Dobbins describes the cache and how it is implemented, and the word "hash" is only found within this section. No mention of the word "hash" is contained within section B.3, which describes how the access list is implemented using an AVL tree. Accordingly, the hash codes mentioned in Dobbins have nothing to do with the AVL tree.

Thus, at best, the cited portions of Dobbins teach a system in which a cache, which is accessed using hash codes, stores the results of various procedures. Such procedures include access filtering, which can be performed using an AVL tree. These portions of Dobbins do not anticipate, teach, or suggest a hash table that is configured to encode an access list and to

store binary comparison trees, as recited in claim 1. For at least the foregoing reasons, claim 1 is patentable over the cited art. Claims 2-6 are also patentable for at least these reasons.

The Examiner also asserts that because the terms "hash table," "binary comparison tree," and "access control list" are allegedly not defined by Appellant's specification, the Examiner is free to interpret these terms broadly. Answer, pp. 6-7. However, Appellant notes that any reasonable interpretation of the term "hash table" involves recognizing that a hash table is quite clearly a type of table. An AVL tree is quite clearly not a table. Thus, even under the broadest reasonable interpretation of the term "hash table," an AVL tree cannot anticipate a hash table.

Independent claims 16, 35, and 52 each recite a "Hash Table" that is configured to "store Binary Comparison Trees" as well as to "encode an Access Control List." Accordingly, these claims are patentable for reasons similar to the foregoing reasons provided above and in the Brief with respect to claim 1. Dependent claims 17-21, 31-34, 36-43 and 53-57 are patentable for at least these reasons.

35 U.S.C. §102(b) Rejection of Claims 2, 17, 38, and 53

Appellant asserts that claim 2 is not anticipated by Dobbins for at least the reasons set forth in the Brief. Claim 2 recites a method comprising:

> constructing a hash table index value from one or more bit positions, within the
>> received at least one packet, pointed at by one or more pointers of a Hash-Table-Balancing Bit Selection Vector; and

> walking a binary comparison tree associated with the constructed hash table index
>> value.

In the Answer, the Examiner states that "Dobbins discloses setting an entry is done by hashing the source and destination addresses into one byte hash code and linking the entry into a 'bucket' quickly accessible by that code." Answer, p. 8. However, this statement fails to show how Dobbins teaches the specific features recited in claim 2. For example, the Examiner has not shown where Dobbins teaches that a particular binary comparison tree is associated with a hash table index value constructed as described in claim 2.

Additionally, the Examiner has not shown how Dobbins teaches one or more pointers that point to one or more bit positions within a received packet. The Examiner responded to

this argument by citing a section of Dobbins that describes a pointer to a base class. Answer, p. 9. Applicants note that a base class is a programming construct, not a bit position within a pointer. As such, a pointer to a base class has nothing to do with one or more pointers that point to one or more bit positions within a packet. Accordingly, the Examiner has not established how Dobbins teaches the features recited in claim 2.

For at least the reasons presented above and in the Reply Brief, claim 2 is not anticipated by the cited portions of Dobbins. Claims 17, 38, and 53 are similarly patentable over the cited art.

CONCLUSION

For the above reasons, as well as the reasons set forth in the Appeal Brief mailed on March 9, 2006, Appellant respectfully submits that the rejections of pending claims 1-6, 16-21, 31-43, and 52-57 are unfounded. Accordingly, Appellant respectfully requests that the Board reverse the rejections of these claims.

Respectfully submitted,

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Attorney for Appellant
Reg. No. 48,509
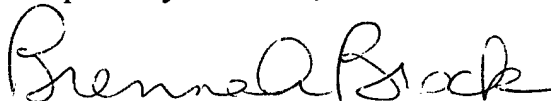512-439-5087 (Telephone)
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Attorney for Appellant   Date of Signature

Serial No.: 09/483,110